

How Trade, Aid, and Remittances Affect International Migration

Maurice Schiff

Trade liberalization in either the sending or the receiving country is likely to increase migration in the long run. In the short run, the effect is ambiguous.



Summary findings

Policymakers typically assume that trade liberalization and foreign aid ultimately reduce international migration — that is, that trade and aid are substitutes for migration. In the Heckscher-Ohlin framework, too, trade liberalization (by reducing international price differentials between factors) leads to a decline in international migration.

Schiff's model shows that trade liberalization in either the sending or the receiving country is likely to increase migration in the long run. In the short run, the effect is ambiguous.

Schiff maintains the Heckscher-Ohlin framework but adds two features found in developing economies of the south and east that affect migration: migration costs and imperfect capital markets.

He assumes that migration costs may be a constraint on migration, especially when combined with imperfect capital markets. Poor migrants without collateral may have trouble getting loans at reasonable rates, especially if they plan to emigrate. And for most migrants, the cost of migration is not negligible. They must pay for transportation and for living expenses until they find a job in the new country, and illegal immigrants must make payments to intermediaries for services and information (to reduce the chance of being caught).

Trade liberalization in a labor-abundant economy, foreign aid, and remittances will increase income from

labor and improve workers' ability to cover the costs of migration. As a result, migration will increase.

(Following trade liberalization, female migrants have increasingly been employed in the textile, garment, light electronics, and agricultural processing industries in Asia, Latin America, and North Africa, for example, and their higher income has helped finance the migration of men.)

What about the combined effect of trade liberalization and foreign aid, a frequent combination associated with bilateral and multilateral aid? The lower the labor income and the higher the costs of migration, the more likely trade liberalization, foreign aid, and remittances are to complement each other and lead to increased migration. (This is particularly applicable for south-north and east-west migration, as incomes in the sending countries are often low relative to migration costs.)

If trade liberalization in either country is too weak to positively affect migration, adding either foreign aid or remittances is likely to increase migration.

If trade liberalization is significant enough to increase migration, adding foreign aid is likely to dampen that effect, and remittances will have no effect.

Migration is also affected by geography, by migration laws (in either sending or receiving countries), and by transport technology.

Future work will deal with the welfare consequences of migration, including losses in social capital.

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How Trade, Aid, and Remittances Affect International Migration*

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I. Introduction

The issue of trade policy and international migration has figured prominently in recent debates on regional trade agreements such as NAFTA and the Association Agreements between the EU on the one hand and Eastern European and Maghreb countries on the other hand. It has also figured in the debate in the EU in relation to the potentially massive emigration from the former Soviet Union (FSU) and in the context of Algeria's rising political instability. Foreign aid has also been considered in this context. Much of the debate has been based on the assumption that trade liberalization and foreign aid lead to a reduction in international migration.¹

Similarly, in the Heckscher-Ohlin international trade model where comparative advantage is based on relative factor abundance, trade liberalization leads to a fall in international migration by reducing international factor price differentials. In that sense, trade and migration are assumed to be substitutes.²

There is some evidence in the migration literature suggesting that migration and trade

¹ For instance, Germany's foreign minister Klaus Kinkel recently declared that - in the context of the concern with emigration from the FSU - opening the West European markets to goods from the East was the highest priority of a new initiative on a common European "ostpolitik" (Financial Times, March 24, 1994). Similarly, President Salinas of Mexico has stated in relation to NAFTA that Mexico wants to export more goods, not people.

² The seminal paper which derives the substitutability result is Mundell (1957). A recent paper which makes the same argument is Faini and Venturini (1993). They state that "By pursuing more liberal trade policies, industrialized countries may contribute to significantly reduce migration pressures".

may in fact be complements rather than substitutes, i.e., that trade liberalization may lead to an increase in both migration and trade, at least in the short run (US Commission for the Study of International Migration 1990, Russell and Teitelbaum 1992, Martin 1993). Martin suggests that economic development and regional integration such as NAFTA may generate a migration "hump", with migration first rising and then falling. Though the ideas presented in that literature may have a lot of merit, no rigorous framework is presented.³

Complementarity between migration and trade has not only been argued in the migration literature but is found in the trade literature as well. For instance, Markusen (1983) argues that if the basis for trade is something other than a difference in relative factor endowments - such as a difference in technology or economies of scale - then migration and trade are complements. Economies of scale are important for North-North intra-industry trade where taste for variety determines much of the trade flows. They are of much lesser importance for North-South trade. And though technological differences play an important role in North-South trade, the complementarity result Markusen obtains is specific to the way he models technological differences.⁴

This paper maintains the factor proportion framework but adds some features found in

³ Sjaastad (1962), in a seminal paper, applies investment theory to the decision to migrate. He does not examine the impact of trade policy since his paper deals only with domestic migration.

⁴ Markusen assumes that technology is higher in one country but only in one sector. More realistically, assume that the higher technology were embedded in one factor, say capital, which would be more productive in both sectors in the North (with both better agricultural and better industrial machinery). In that case, technological differences would result in substitutability between migration and trade.

economies of the South (and East). These include migration costs and capital market imperfections. Adding these features to the Heckscher-Ohlin model is likely to generate complementarity between trade, foreign aid and remittances on the one hand, and migration on the other hand. The migration effect of foreign aid is shown to differ from the effect of remittances. The model with intersectoral factor mobility is developed in Section II. In Section III, I develop the model for the (short-run) case where capital is sector-specific. Section IV presents preliminary evidence and Section V concludes.

II. The Model with Factor Mobility

The trade literature has examined the impact of trade policy on the reward from investing in migration. In other words, that literature has focused on the impact of trade policy on the international wage differential. We also focus on the investment cost. Assuming non-zero migration costs may reverse the impact of trade policy on migration if coupled with the assumption of imperfect capital markets.

The assumption of migration costs and imperfect capital markets as a constraint to migration is valid for a large number of developing countries. Starting with the capital market, most people in poor developing countries have little or no collateral and therefore cannot borrow at competitive rates on the capital market. In order to obtain a loan, they may have to pay prohibitive rates and these may result in a negative net present value for the potential investment which the loan was to finance. If that is the case, the investment will not be undertaken. This applies especially to international migration since the risk of default is even larger in that case.

Migration costs have several components, some of which are emotional ⁵ and others financial. The financial costs include the transport cost, the living expenses in the destination country until a job is found, and the additional cost for illegal migrants such as the investment in information to reduce the chance of being caught and the payments to the various intermediaries who provide illegal migration services. If a large proportion of unskilled labor migrates illegally, then the low-income migrants will experience high migration costs. And they may be unable to finance their migration costs out of their low wage income.

a. Trade Liberalization.

Assume two economies with two factors, labor and capital, producing (and consuming) two goods. ⁶ The economy in the North, denoted by N, is a large developed economy such as the European Union (EU) or the U.S. The economy in the South, denoted by S, is a small developing economy whose migrants typically move to the U.S. - such as Mexico and Central American or Caribbean countries - or whose migrants typically move to the EU - such as Morocco, Tunisia, Turkey, Poland or Cote d'Ivoire.

Assume that N is relatively capital abundant and S is relatively labor abundant. We assume that country S trades exclusively with N. Given that S is small, it takes prices in N as given. Prices in N and trade policy in S determine domestic output prices and factor prices in

⁵ On the emotional cost due to the loss in social capital, see the concluding comments at the end of Section V.

⁶ A more elaborate model, with two labor skills (skilled and unskilled) and with variable migration costs, or alternatively with a continuum of labor skills, is provided in Lopez and Schiff (1994).

S. S exports its labor-intensive good.⁷ And it is assumed to protect its capital-intensive import-substituting sector M. This lowers the wage-rental ratio in S below that in N, with a lower wage rate and a higher rental rate in S than in N. The wage differential provides the incentive to migrate from S to N.

Reducing protection of the import-substituting sector in S raises its wage-rental ratio and reduces the wage gap between N and S.⁸ Abstracting from the ability to pay for migration costs, this should lead to a reduction in migration.

However, assume that in S,

$$(1) \quad W_p < W_o < W_p + C,$$

where W_o is the initial wage rate, W_p is the subsistence wage, and C is the constant unit cost of migrating from S to N. Assume also that there is no resource accumulation through domestic saving (all goods are perishable) or through foreign saving (trade is balanced). Thus, migration costs C must be paid out of current income. At W_o , individuals can pay for their subsistence costs W_p but not for their migration costs C as well. Hence, they consume their

⁷ In the case of Morocco, Faini and de Melo (1994) have found that for a given industrial sector value added, sectoral employment increases as the share of exports in value added increases, confirming the higher labor-intensity of exports.

⁸ Of course, if there is unemployment in the South, say because of a minimum wage law, then trade liberalization will lower unemployment and will not necessarily result in a higher wage rate.

entire income W_o (larger than W_p).⁹

The new wage rate following partial trade liberalization is $W' > W_o$.¹⁰ Denoting the wage rate in the North by W_n , one of the following inequalities must hold:

$$(2a) \quad W_o < W' < W_p + C \quad \Rightarrow \quad \text{no migration,}$$

$$(2b) \quad W_p + C < W' < W_n - C \quad \Rightarrow \quad \text{migration from S to N,}$$

$$(2c) \quad W_p + C < W_n - C < W' \quad \Rightarrow \quad \text{no migration.}$$

For simplicity, the time dimension has not been explicitly included. In fact, though, decisions are made sequentially. Workers in the South first check whether they can pay for migration. If they can not (i.e., if inequalities (2a) hold), then they consume W' and do not migrate. If they can pay for migration (first inequality of (2b)), they then have to decide whether it is worthwhile to migrate. In the South, they earn W' . In the North, they will earn $W_n > W'$. However, to obtain the wage difference $W_n - W'$, they must invest C in migration costs. Thus, they will migrate if and only if $C < W_n - W'$, or equivalently if $W' < W_n - C$ (second inequality of (2b)). If $W_n - W' < C$, or equivalently if $W_n - C < W'$ (inequality (2c)), they will choose not to migrate even though they can pay for the migration costs.¹¹

⁹ We implicitly assume that there are capitalists who own the entire capital stock K and who consume their entire income from capital rK , where r is the rental rate per unit of K . Then, trade is balanced.

¹⁰ The real wage also increases since P_m , the price of importables, falls and P_x , the price of exportables, remains unchanged.

¹¹ The model presented here is a one-period model. It is clear that migration is an investment (Sjaastad 1962) whose returns are obtained over a number of periods. Thus, W_s and W_n are flows while C is a stock. A one-period version rather than a dynamic version of the

Thus, migration will only take place if (2b) holds. When will migration stop? With reduced protection in S and intersectoral factor mobility, the capital-intensive import-substituting sector M contracts and the labor-intensive export sector X expands. The opposite occurs as labor migrates from S to N. With a reduction in labor supply, X contracts and M expands (Rybczynski Theorem). This has no effect on factor returns as long as both X and M are produced and X (M) remains the exportable (importable). However, since both X and M are consumed in the South, and since sector X shrinks and sector M expands as more people migrate, at some point the excess-supply of X falls to zero and the excess-demand for M falls to zero as well (since trade is balanced). At that point, X is about to become the importable and M the exportable. However, with M becoming the exportable at that point, the tariff on M loses its effect, the economy is in a free trade situation and factor prices are equalized. Hence, migration stops at the point where the direction of trade is being reversed. Thus, even though the trade barriers are not effective (i.e., we have free trade), neither trade nor migration takes place in equilibrium. The new wage in the South is W'' , where

$$(3) \quad W'' = W_n.$$

Thus, in this model, if partial trade liberalization raises the wage rate sufficiently to pay for migration costs but not to the point where migration becomes unattractive, it will lead to a temporary increase in migration. This results in a permanent increase in the stock of migrants

model is chosen here because of its simplicity and because it brings out the central point on the effect of migration costs and imperfect capital markets on migration.

in N and in an equivalent permanent reduction in labor in S. The same results would obtain if partial trade liberalization were to take place in the labor-intensive import-substituting sector in the North. This would lower the domestic producer price in that sector in the North and lower W_n , say to W'_n . It would also raise the world price in that sector and raise W_s , say to W' .¹² Assuming that $W_p + C < W' < W'_n - C$, migration will take place as well.

Trade liberalization in the North seems preferable for the South than trade liberalization in the South because the former results in an improvement in the South's terms of trade (a rise in the price of its exports). This is true in terms of GDP. However, for the migrants, trade liberalization in the South is preferable because the wage rate in the North does not fall in that case. Thus, though GDP in the South is higher with liberalization in the North, the same need not be true for GNP.

Interestingly, in the standard Heckscher-Ohlin model, trade liberalization leads to a contraction of M and an expansion of X. In this case, the exact opposite occurs because of the impact on migration. S now exports M and imports X.

Also, the partial trade liberalization initially reduces the return to capital. Generally, when a policy penalizes a sector or factor, the market reacts in order to mitigate the penalty. However, in this case, just the opposite takes place. Rather than mitigating the initial effect on capital, the market reaction exacerbates it. At first, partial trade liberalization lowers the return to capital but the return remains higher than in the North because of the remaining protection on sector M. In the long run equilibrium where M is exported and X is imported, the return

¹² The real wage increases in this case as well since W rises proportionately more than P_x (magnification effect) and P_m remains unchanged.

to capital falls further and equals the level in the North.

b. Foreign Aid

What about the effect of foreign aid? Assuming the aid goes to labor, it will raise labor income from W_0 to, say, W' , and will have the same impact on migration as trade liberalization.¹³ The aid would be expected to go to labor if it were given in the form of food (such as the U.S. food aid program P.L. 480) since such aid would be expected to be distributed to the poorer segments of the population.¹⁴ If the foreign aid is invested in international transport infrastructure (such as ports and airports), it will lead to lower international transport costs, resulting in higher domestic prices for exports and lower prices for imports. The effect is similar to a movement towards free trade, with higher wage rates and possibly higher migration.

What about the effect of the combination of trade liberalization and foreign aid? This question is most relevant since a number of trade liberalization experiments have been supported by bilateral and multilateral aid. For instance, Mexico's and Morocco's trade reforms were supported by IMF Standby Agreements and World Bank Structural Adjustment Loans. And the process of market reform in the FSU has also been supported by foreign aid (from the IMF,

¹³ One difference is that in this case, the increase in labor income does not come at the expense of capital income. Second, imports are larger than exports in this case, with the trade deficit financed by foreign aid. The same holds for the case of remittances below.

¹⁴ This has not always been the case as the food has not always been distributed to the poor but has at times been sold in the market.

World Bank, EBRD, as well as bilateral aid).¹⁵

With trade liberalization, W_o rises to W' . Denote the foreign aid per worker by F and denote labor income by Y , where $Y = W' + F$. Then one of the following inequalities must hold:

(4a) $W' < Y < W_p + C$,

(4b) $W_p + C < Y < W_n - C$, or

(4c) $W_p + C < W_n - C < Y$.

(4d) $W_p + C < W_n - C < W_n + C < Y$.

If W' is still too low to finance the migration cost before foreign aid is given (so that the binding constraint is inequality (2a)), foreign aid can have four possible effects: it will either have no impact because it is small and labor income is still too low to finance the migration cost (the constraint is now (4a)), it will result in an increase in migration - the binding constraint becoming inequality (4b), it will have no impact because labor income is so high that there is no incentive to migrate (inequality (4c)), or labor income is so high that it results in return migration from the north to the South (inequality (4d)). If W' is high enough to pay for migration costs before foreign aid is given and migration takes place (the binding constraint is (2b)), then foreign aid can have three possible effects: it will either have no effect (the constraint is now (4b)), it will result in a decrease in migration (the binding constraint becoming (4c)), or

¹⁵ The amount of the loans by the World Bank, the IMF, the EBRD and by bilateral agencies cannot be entirely considered as aid. These loans generally entail better conditions than those offered in the market (lower interest rates, better repayment conditions, etc). The aid element in those loans consists of the value of these better conditions.

it will result in return migration (inequality (4d)). Hence, if trade liberalization by itself has a positive impact on migration (inequality (2b) holds), then foreign aid is likely to dampen that positive effect and may even result in return migration. Finally, if W' is that high that migration is unattractive (inequality (2c) holds), then foreign aid will either have no impact (inequality (4c)), or if foreign aid is large enough, it will result in return migration (inequality (4d)).

c. Remittances

What about remittances? Assume that migration is a family decision rather than an individual one, with migration by one member of the family being part of the family's intertemporal welfare maximization process.¹⁶ Initially, though, if equation (1) holds, migration is not feasible (given the lack of access to formal credit markets). However, informal credit markets may exist where borrowing is possible. For instance, if more than one member of the (extended) family works, with each one earning $W_o > W_p$, those who do not migrate may choose to sacrifice some present consumption (up to a maximum of $W_o - W_p$) to finance the migration of the family member selected to migrate. The implicit family contract implies that the migrant who is now earning a higher income W_n in the North will remit part of the income to his/her family in the South. The remittances raise the income of family members in the South.

Denote remittances per remaining family member by R and labor income by $Y = W_o + R$. Then, given equation (1), remittances will either have no impact (inequality (4a) holds)

¹⁶ On migration as part of a family's decision process, see Stark 1991.

or will lead to an increase in migration (inequality (4b), (4c) or (4d)).¹⁷ Why does migration increase when inequalities (4c) or (4d) hold in the case of remittances but not in the case of foreign aid?

There is a fundamental difference between remittances and foreign aid. Foreign aid actually raises family income. Remittances on the other hand are a transfer within the family. Hence, though inequality (4c) in the case of foreign aid implies that there will be no migration and inequality (4d) implies that there will be return migration, this does not hold for remittances. Remittances raise income for the family member in the South and lowers income for the family member in the North. Since family welfare is the objective to be maximized, what matters is the comparison between the wage rate W_o in the South and the wage rate in the North net of migration costs $W_n - C$. Since $W_o < W_n - C$, the members of the family will migrate even if inequality (4c) or (4d) holds.

With trade liberalization, migration either remains unchanged (inequality (2a) or (2c)) or increases (inequality (2b)). If inequality (2a) holds, then remittances will have no effect on migration (inequality (4a)) or will raise it (inequality (4b), (4c) or (4d)). If inequality (2b) holds and trade liberalization has by itself led to an increase in migration, then remittances will have no impact on migration. They can not, as in the case of foreign aid, result in lower migration or return migration.¹⁸

¹⁷ Remember also that the initial migration would not have occurred without the implicit family contract that the migrant would remit.

¹⁸ Of course, if investment takes place, large remittances may lead family members to remain in the South in order to manage the investments (such as building a family house, running a family business or managing family assets).

What about the impact of trade liberalization on remittances? Since trade liberalization leads to an increase in the wage in the South, the incentive to remit by migrants, in the context of family welfare maximization, falls. Moreover, trade liberalization lowers P_m , leading to an additional increase in real labor income in the South and to a further reduction in remittances.¹⁹

III. The Model with Specific Factors

In the short run, some factors are immobile across sectors. For instance, a chemical plant or a textile machine cannot be transformed overnight into a tree or a milk processing plant. I assume here that capital K is sector-specific in the short run while labor L is mobile across sectors. This applies especially to unskilled labor. Skilled labor may also be sector-specific in the short run.

The model here draws on the seminal paper by Mussa (1974). In his paper, Mussa examines the effect of a change in the terms of trade in the short run - under factor specificity - and in the long run when all factors are fully mobile. We add international migration of the mobile factor L , migration costs and imperfect capital markets.

Assume that the importable sector M is capital-intensive. Protection of M implies a higher return to capital and a lower return to labor in the home country than in the world (long-term equilibrium). Assume now that trade is liberalized. This is shown in Figure 1. The

¹⁹ There is also a substitution effect. The lower P_m makes consumption of M in the South relatively more attractive than it was before. One dollar of remittance now buys more than before. This should lead to an increase in remittances. It would seem plausible to expect the two real income effects to dominate the substitution effect. If so, trade liberalization will result in a reduction in remittances.

downward-sloping curves represent the value of the marginal product of labor in the two sectors, $VMPL_m$ and $VMPL_x$. With liberalization of M, the domestic price of M, P_m , falls from $P_m(0)$ to $P_m(1)$, and $VMPL_m(0)$ falls to $VMPL_m(1)$. Equilibrium is at the lower wage rate W_1 (rather than W_0), with more labor employed in X and less in M.

Given that the wage rate W_s falls from W_0 to W_1 , what happens to migration? First, P_m falls by a larger proportion than W_s . This can be seen from Figure 1. Only if $VMPL_x$ had zero elasticity would $d\log P_m = d\log W_s$. With positive elasticity of $VMPL_x$, $d\log P_m > d\log W_s$. Consequently, even though W_s falls, it is not clear that the real wage $W_s/CPI = W_s/[aP_m + (1-a)P_x]$ falls (where a is the share of M in consumption). Since the change in W_s/CPI is ambiguous, the impact on migration is ambiguous as well.

If trade liberalization occurs in the North, the world price of X, which equals the domestic price in the South, rises, raising $VMPL_x$. The wage rate in the South rises by a proportion of the increase in P_x to a level W_2 (see Figure 1). The CPI may rise by more or less than W_2 . Hence, the impact on migration is ambiguous in this case as well.

What about the impact of foreign aid? As in the long-run case, as long as the aid goes to labor, total labor income rises and migration may remain unchanged (equations (4a) or (4c)), increase (equation (4b)) or it may return (equation (4d)).

What about remittances? Assuming some family pooling of incomes to send a family member North. As in the long-run case, the resulting remittances will either have no impact on migration because they are small (except for the impact on the original migrant who remits as part of an implicit family contract) or they will have a positive impact on migration.

IV. Evidence on Complementarity

From the model presented above, we obtain that the impact of trade liberalization on migration is ambiguous in the short run and is positive (or zero) in the long run. The assumption is that the migration cost C is an important constraint for a significant share of potential migrants.

There is some evidence to support the fact that the financial cost of migration is a constraining factor. First, a World Bank study on Morocco (Report 11918-MOR, 1994) found that most migrants do not belong to the group below the poverty line. The study also found that "... workers' remittances benefit relatively non-poor households rather than the poor". Of course, the evidence may point to the fact that migration requires a minimum of skills as well as funds. Similarly, Freeman (1993) argues that migrants from El Salvador to the U.S. tend to be educated because the poorly educated have problems financing migration costs as well as problems of language and access to information. Thus, this evidence indicates that unskilled labor has both a lower income and lower access to credit in order to pay for migration costs.

There is also evidence that migration costs play an important role in the decision to migrate from Mexico to the U.S. Morrison and Zabin (1994) found that the trade reform in Mexico initiated in 1985 had a positive impact on migration to the U.S. They also found that migration from Mexico to the U.S. increased as the wage in the North of Mexico increased.

Moreover, in the case of rural Pakistan, Adams (1994) found that the share of remittances from abroad in total household income rises as income rises, with the share being 1% in the lowest quintile, 3.6% in the second quintile, and 11.6% in the highest quintile. This

supports the World Bank findings on Morocco. Adams ascribes the difference in the shares to the high cost of migration, which he estimates at US \$1,300 per migrant, and which operates as a barrier since few low-income people can pay it.

One possible mechanism through which trade liberalization may result in higher migration is through transfers within the family. In a number of trade liberalizing countries, the expanding export industries have employed female labor intensively. This can be witnessed in Asia, Latin America and North Africa in the textile, garments, light electronics and agricultural processing industries. The higher income earned by the women employees can then be used to finance the migration of men.

Faini and Venturini (1993) estimated the relation between outmigration from Southern Europe to the North and per capita income for Portugal, Greece, Turkey and Spain. For the first three countries (the poorest in the sample), they found that migration was positively related to income and negatively to income squared, indicating that migration first rises with income (inequality (1), the migration cost constraint, is the binding one) and then falls with income (inequality (2b), the income differential constraint, is the binding one). In the case of Spain, migration was found to fall with income, indicating that at the higher Spanish per capita income, the income differential constraint is the binding one.

The argument of the inability to pay for migration costs is less likely to apply in the case of contract labor whose transportation and related costs are paid by the employer. This practice is widespread in the case of migration from South Asia and South-East Asia to the Gulf. Complementarity between trade and migration is less likely in this case.

Clearly, complementarity between trade liberalization and migration is more probable the

lower is labor income and the higher is the migration cost. The cost of migration depends on geography, migration laws in both sending and receiving country, and on transport technology.

For instance, one would expect complementarity to be more likely for people living in the South of Mexico and in Central America than in the North of Mexico because wages are lower and migration costs to the U.S. are higher in the former than in the latter. Similarly, complementarity is more likely to apply for people living in the Sahara region of the Maghreb (as well as in Mali or Senegal), than for those living in the Northern part of the Maghreb. And it is more likely for those in the East living further away from Western Europe than those living closer, both because of higher migration costs and lower income in the former.

Migration laws and regulations will also affect migration costs. Costs rise if the sending country does not allow its citizens to emigrate - such as the Soviet Union or Cuba - or makes it more difficult for them - such as Haiti recently, or Morocco after 1975 which made it harder for Moroccans who wanted to emigrate to obtain a passport. The receiving country can raise migration costs by tightening regulations (e.g., by making migration illegal for more people or by reducing the length of stay for legal immigrants) as France did for unskilled immigrants from Morocco after 1975, and by improving the enforcement of existing regulations. Thus, one would expect complementarity to be more likely to hold for the less skilled labor both because they earn less and because migration costs are likely to be higher since more of the low-skilled or unskilled may be unable to migrate legally.

V. Concluding Comments

This paper has shown that trade liberalization in either the sending or the receiving country is likely to lead to an increase in migration in the long run, though the short-run effect is ambiguous. It has also shown that foreign aid, if it benefits labor, as well as remittances, are likely to result in an increase in migration both in the short and in the long run. These complementarity effects between trade liberalization, foreign aid and remittances, on the one hand, and migration on the other, are more likely to be important the lower labor income and the higher the migration costs. Hence, this should be particularly applicable to South-North and East-West migration as incomes in the sending countries are often low compared to migration costs.

What about interaction effects? If trade liberalization is significant enough to have a positive effect on migration, then adding foreign aid is likely to dampen the effect of trade liberalization while remittances will have no additional effect on migration. If trade liberalization was too timid to have a positive effect on migration, then adding either foreign aid or remittances is likely to have a positive effect on migration.

The welfare gains of trade liberalization in the case of a positive migration effect are larger than the traditional gains from freeing trade and also include the international wage differential net of migration costs for the additional migrants. One aspect which was abstracted from in the cost of migration and in the welfare calculus is the loss of social capital associated with migration. The migrant loses from leaving home, culture, lifestyle, language, family and friends, while residents in the South lose because a member of the family and a friend has emigrated. Future work will include a more detailed analysis of the welfare consequences of

migration, including the effect of loss of social capital, for the sending country as well as for the receiving country and for the migrants.²⁰

²⁰ On the welfare consequences of migration in the presence of social capital, see Schiff 1992.

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